

# PATENT SPECIFICATION



Convention Date (United States of America): Sept. 27, 1945.

615,169

Application Date (In United Kingdom): July 31, 1946.

No. 22758/46.

Complete Specification Accepted: Jan. 3, 1949.

Index at acceptance:—Class 96, A3a.

## COMPLETE SPECIFICATION

### Bedplates for Beaters for Paper-making

We, E. D. JONES & SONS COMPANY, a Company organized under the laws of the State of Massachusetts, United States of America, of Pittsfield, Massachusetts, United States of America, assignees of DWIGHT E. JONES, a citizen of the United States of America, of 27, Wellesley Street, Pittsfield, Massachusetts, United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to beaters such as are used in the paper-making art for processing paper making materials, and it is directed more particularly to the construction and mounting of the bedplates for such beaters.

According to some of the prior art, metal bedplates were made to receive several separately formed metal cutting bars, spaced apart with wood or metal packings between them, and secured together by bolts or rivets. This composite bedplate was then assembled in a shoe or holder, commonly termed a plate box, being held therein by means of wood packings located on either side of the bedplate and between it and the wall of the plate box.

It has been customary to make those wood packings in several side-by-side pieces with at least one piece tapered so that, when the complete assembly is fitted together, this tapered piece can be used wedge-wise to make the whole assembly tight. In cases where the treatment materials would exert an abrasive action, the top of the wood packings has been covered with metal to prevent the wood from being washed or worn away. The said plate box has usually been tapered lengthwise and vertically, so that when it is inserted in its pocket in the beater it is held tight.

Also, according to other prior art, bedplates have been cast of very hard materials with integral cutting edges forming part of the base material. These plates

have been rough along their length and it has been necessary to pack the space between their sides and the wall of the plate box with wood, or in some cases the plates have been inserted directly into the beater, as with bedplates made of stone, but even then the space between the plate and the opening in the beater needs to be packed with wood.

According to this invention, a one-piece bedplate is formed to have integral cutting bars on its working face by having grooves machined in such working face according to any desired pattern or arrangement, and is secured to a support or base on which it is mounted so that the whole assembly may be readily and easily slipped into a plate box opening in the beater without the necessity of a plate box, the bedplate and the said support being made to a size corresponding to that of the conventional plate box, and so that they will fit tightly in the opening which is provided in the beater for the plate box.

The plate construction may be made of any metal desired, depending upon the requirements of a particular paper mill and the spacing and arrangement of the blading may be as desired since the same is not dependent on or limited in any way to filler bars as in the prior art.

Not only may the spacing of the blading be as desired, but the so-called pattern thereof may be varied to suit conditions. In fact, the blading presenting a certain arrangement or pattern may be entirely removed by machining and another pattern of blading be formed in the bedplate.

In the accompanying drawing, examples of the invention are illustrated:

Fig. 1 is a plan of the end portions of a bedplate construction embodying the novel features of the invention;

Fig. 2 is a cross-sectional elevation on the line 2-2 of Fig. 1;

Fig. 3 is a view similar to that of Fig. 1 shewing another arrangement or pattern of blading; and

[Price 2/-]

Fig. 4 is a vertical section of a beater having (for the purpose of contrast) the novel bedplate construction of this invention and a prior art construction associated therewith.

As shewn in Fig. 2, a base or support 2 is provided, which will preferably be made from metal and in such form and size as to be receivable directly in the beater and at the same time rigidly support the bedplate in proper relation to the beater roll.

A bedplate 4 is provided, which on its working face, by a suitable machining operation, is formed to have spaced slots or grooves 6 which provide spaced cutting blades or bars 8. The working face of the plate or faces of the bars will be arranged to provide the proper curvature for the coaction of the bars with those of a beater roll.

The bedplate and support may be secured together by any suitable means. For illustrative purpose, however, the components are secured together by cap screws 10, as shewn. There may be as many cap screws as desired so that the bedplate is secured to the base in a rigid and secure manner.

An extension 12 may be provided on the plate 4 or the support 2 for engagement by a positioning and withdrawal tool adapted to facilitate removal of the construction from the beater. Such tool would have a head to fit in the T-slot 12', for pulling purposes.

The bedplate 4 may be made from various metals such as stainless steel, non-ferrous metals or the like, depending upon the conditions under which it will be used, and the grooves or slots 8 may be provided by any well known machining operation to form the desired blading.

The blading and the spacing thereof, as well as the width and height of the cutting bars, may be as desired, and according to the machining operation selected. The arrangement or pattern of the blading may be varied within wide limits and the blading may be changed or varied by machining off the upper face of the bedplate and providing a different arrangement or pattern, means being provided in such cases to increase the height of the new working face with respect of the supports in the beater.

A plate 4' in Fig. 3, has grooves 6' and blading 8' so as to provide more or less diagonally-arranged cutting bars from

which it will be understood that patterns of blading may be varied within wide limits.

The improved construction provides rigidity, so as to eliminate vibration.

In Fig. 4, which shews a cross section through a beater 16, a roll is represented by 18 which has radially extending cutting bars 20. A frame is represented by 22 in which are disposed a bedplate 24 of prior art construction and bedplates 26 embodying the novel features of this invention. Said figure illustrates the relationship of a bedplate and beater roll for the coaction of the cutting bars.

The means associated with the beater for receiving the bedplate may be varied to suit conditions but will be such as to readily and easily receive the bedplate and hold the same relative to the beater roll for the coaction of the cutting bars.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A unitary bedplate for a beater, formed to have integral cutting bars on its working face by having grooves machined in such working face according to any desired pattern or arrangement, and secured to a support or base on which it is mounted so that the whole assembly may be readily and easily slipped into a plate box opening in the beater, without the necessity of a plate box, the bedplate and the said support being made to a size corresponding to that of the conventional plate box, and so that they will fit tightly in the opening which is provided in the beater for the plate box.

2. A bedplate according to claim 1 having an extension at one end for engagement by a positioning and withdrawal tool for the purpose set forth.

3. A bedplate for a beater substantially according to either of the examples herein described with reference to Figs. 1, 2 and 3 of the accompanying drawings.

4. A beater or the like having a bedplate construction according to any of claims 1 to 3.

Dated this 30th day of July, 1946.

For the Applicants,  
WILSON, GUNN & ELLIS,  
Chartered Patent Agents,  
54/56, Market Street, Manchester I.

[This Drawing is a reproduction of the Original on a reduced scale.]

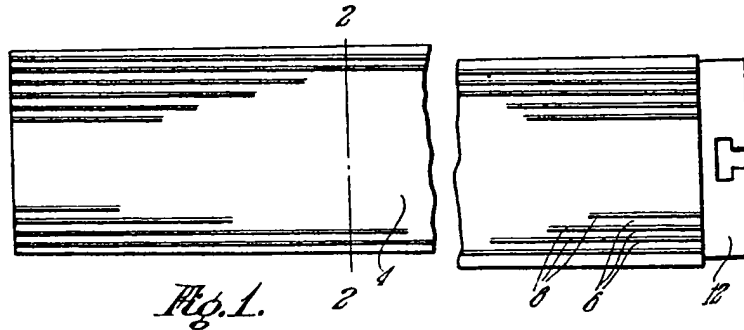


Fig. 1.

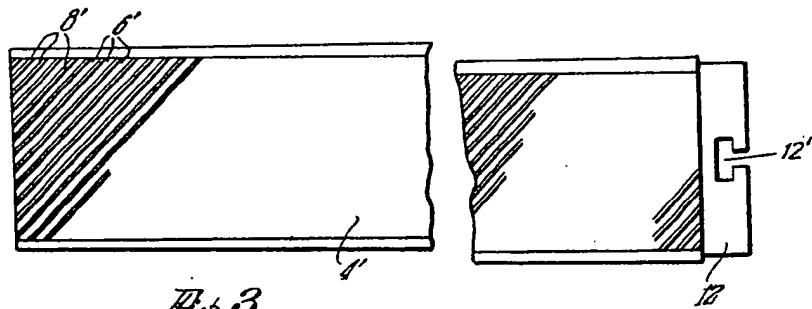


Fig. 3.

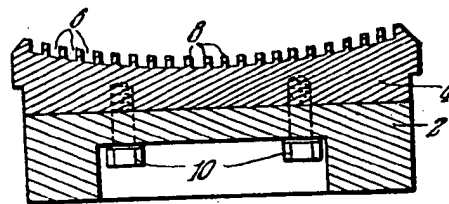


Fig. 2.

EPM TC 1700

FINAL SEARCH DATE

DELIVER TO GOV'T DATE

1/12/03  
615169  
3/4/03

COMPLETE SPECIFICATION

2 SHEETS  
SHEET 2

[This Drawing is a reproduction of the Original on a reduced scale.]

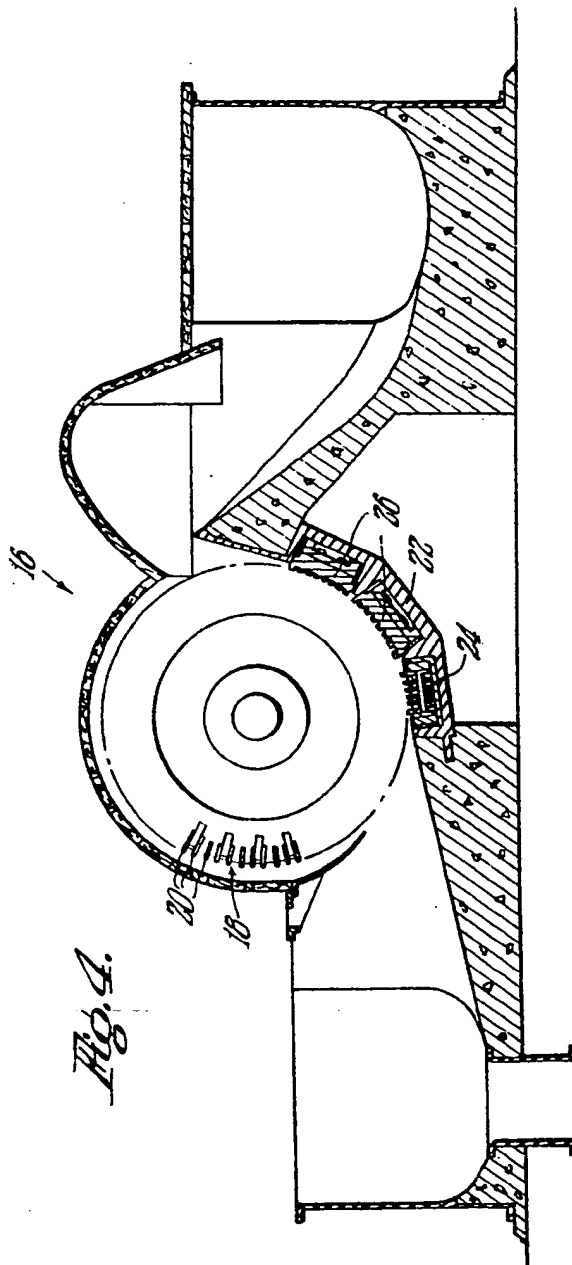


Fig. 4.

H.M.S.O. (Ty. R)